W23:

Project Workflow on the Internet

A/E/C SYSTEMS 2000

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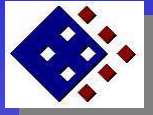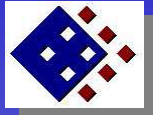
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Agenda

- Introduction and Overview
- A Closer Look at Workflow
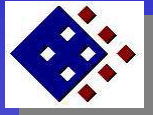- Incorporating Workflow with FM
- Wrap up

Workflow As A Component of Groupware

- Any software product that enables groups of people to work together more efficiently (unlike individual productivity aids such as spreadsheets, word processors, databases, …)

- Origins in Lotus Notes in the '80s

- Potential is enormous because of the Internet as a global network
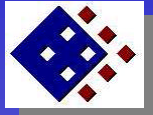
The 3 Cs of Groupware

- Communication
- Collaboration
- Coordination

Groupware Basics....

Messaging   (let them know)

Calendar   (let them know when)

Routing   (let the right people know)

Business processes   (follow the rules)
   (workflow)

Replication   (same information)
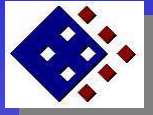
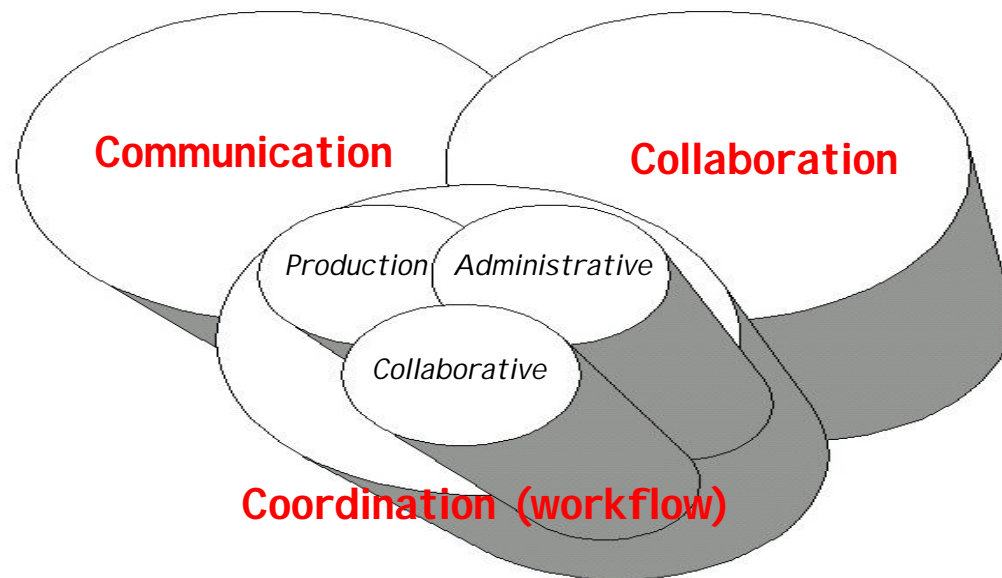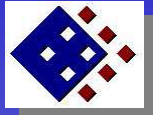**Agents**   (remind them)

Escalation   (tell on them)

Workflow

" A sequence of structured
or semi-structured tasks
performed in series or in
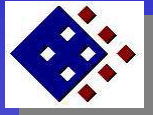parallel, by two or more
individuals, to reach a
common goal."

Types of workflow

Communication

Collaboration

Production   *Administrative*

Collaborative

Coordination (workflow)

1. **Production Workflow**
2. **Administrative Workflow**
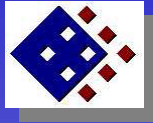3. **Collaborative Workflow**
4. **Ad Hoc Workflow (?)**

Essential Workflow Requirements

1. Graphical Design
2. Roles
3. Rules
4. Exception Handling
5. Monitoring
6. Measuring
7. Simulation
8. Pro-Activeness
9. Database Connectivity
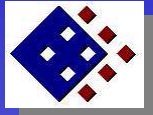10. Document Attachments
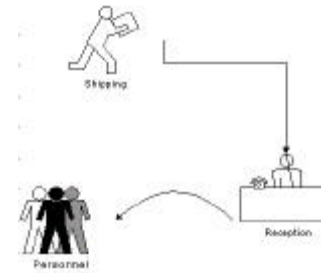
Credit:
Ultimus

Process

- Start with strategic flow chart of business processes
- Business Process Reengineering (BPR)=understanding of workflow patterns and processes behind them
- Modeling the workflow (intra/inter company)
- Related to Total Quality Management (information communication analysis)
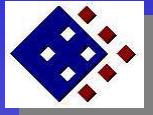- People as information user or producer (based on type of transaction)
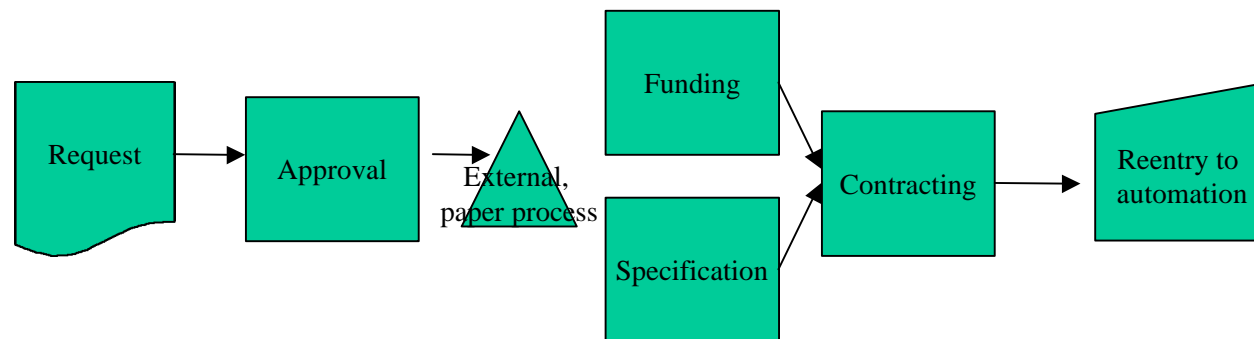
Fully Automated Solutions

- Technology industry seeks workflow as the Holy Grail
- Largely unrealized
- Workflow strongest in document processing
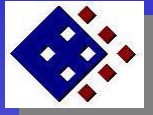 - Assumes all electronic, includes audit, alerting, schedule features
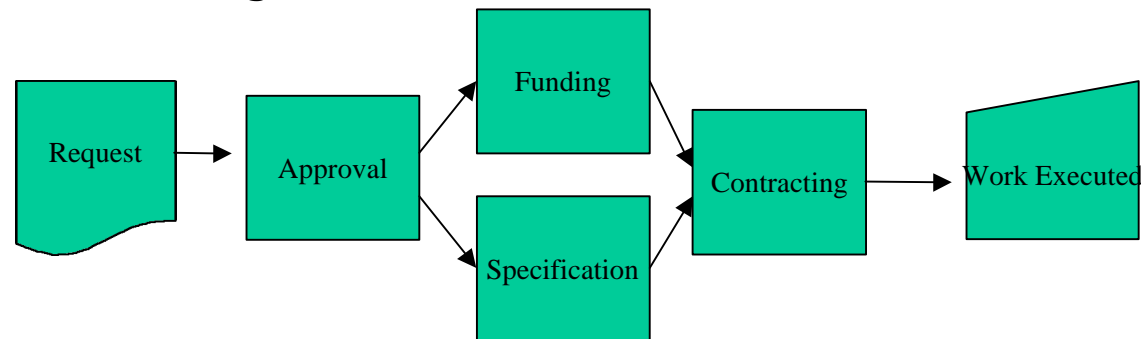
Semi-Automated Solutions

- Some functions are not rigid enough for a fully automated solution
- Use of technology in conjunction with process control through education and planning


Request → Approval → External, paper process → Funding / Specification → Contracting → Reentry to automation

FM Workflow offerings today

- Budding industry, little consensus
- Name of the game is acquisition, many companies snapping up workflow
- Many examples of partial automation, e.g. Push technology
  - e-mail alerts or telephony functions to bring the work request to the staff
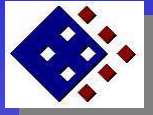- Process Logic Paths vs. Workflow
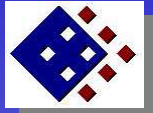
Document Workflow

| Files & Directories | Attributes & Searches | Revision Control | Compound Document Management | Document Routing |

Document Management →

Low End   **High End**
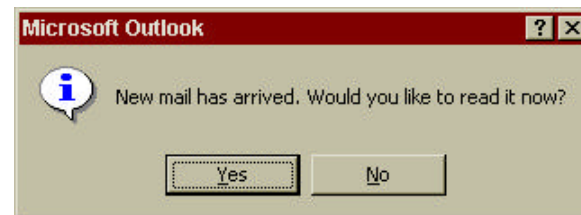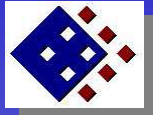
Push - Pull

- Does the user have to initiate interaction?
- Most FM solutions are Pull solutions.
- Push solutions are heavily dependent on e-mail notification

Microsoft Outlook

ℹ New mail has arrived. Would you like to read it now?

[Yes] [No]

- Lotus Notes is the most familiar database solution, new products from Oracle Workflow and MS Access Workflow for SQL Server
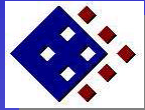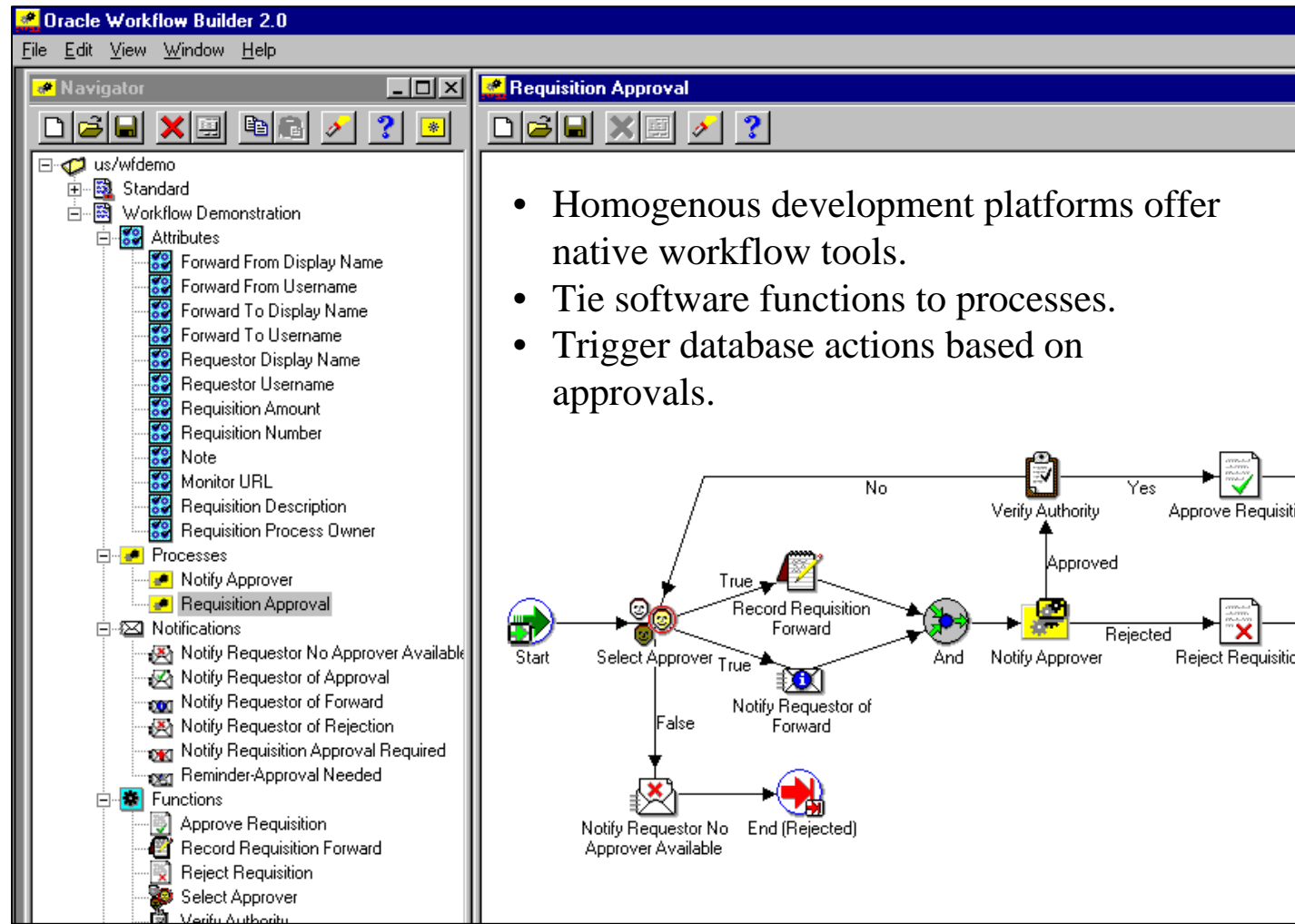
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Thick or Thin

- From its origins in e-mail, mature systems require thick client-based software.

- The trend for all web applications is thin, so workflow is going on a diet!

- Drives the selection of coding technology, especially applets versus servlets.
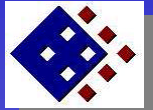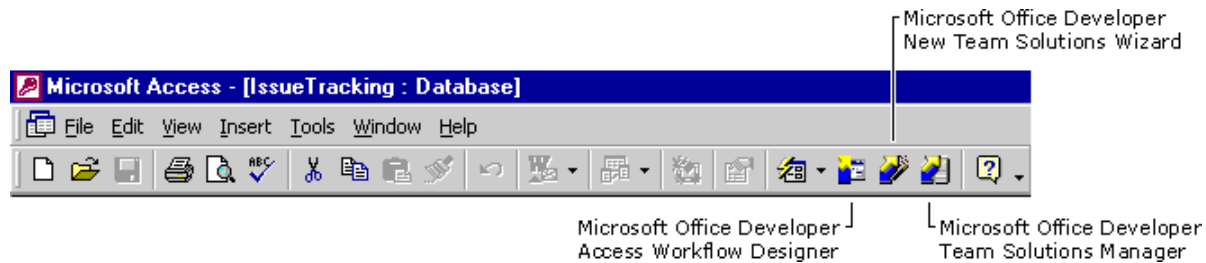
Database Handling

- Homogenous development platforms offer native workflow tools.
- Tie software functions to processes.
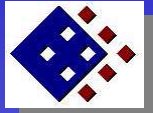- Trigger database actions based on approvals.
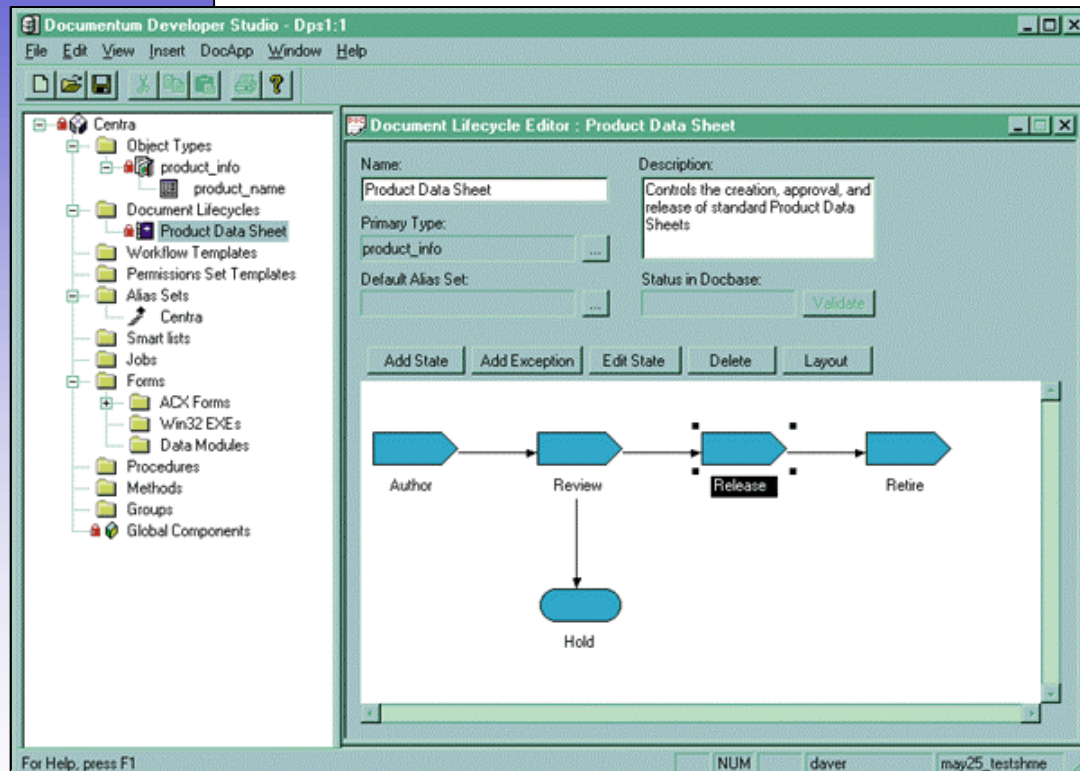
Image credit:
Oracle Corp.

Database Handling

•Microsoft Office Developer Access Workflow Designer for Microsoft® SQL Server™

•Offers business logic integration from tools already in the IT environment
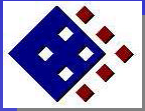
Image credit: Microsoft

Idealized Workflow
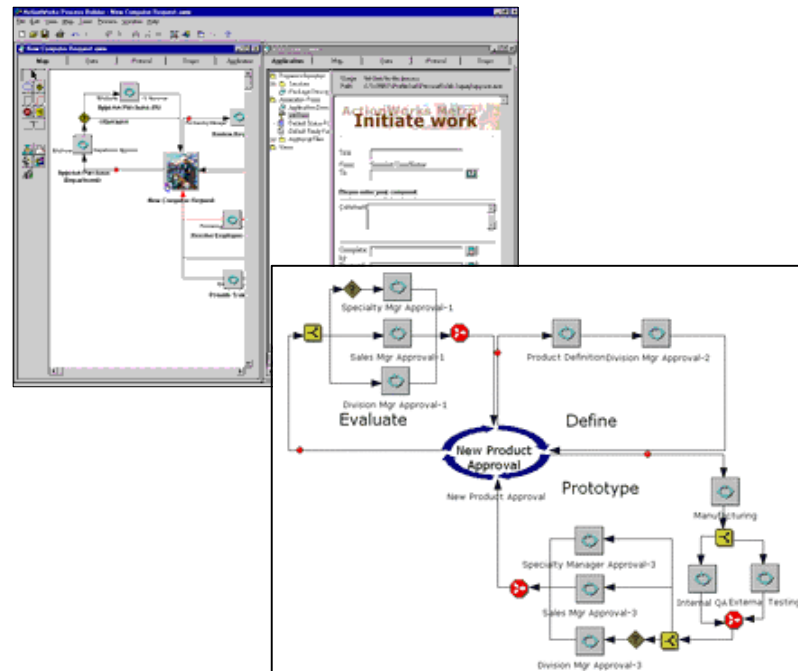

- Document paradigm
- Rules
- Exception Handling
- Graphical Design
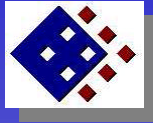- Role-based
- Pro-Active

Image Copyright Documentum

Idealized Workflow

- Strong tie from process to graphical tool
- Database connectivity

Image credit:
Action
Technologies

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Real Life Facilities Business...

– Administrative Tasks - workflow supports the organization's needs
  • Timesheets, Purchasing, Staff review and development

– Collaboration Tasks - workflow enables people to work together in teams.
  • Project management, A/E design, move management, space planning, capital budgeting

– Production Tasks - workflow itself is the primary task
  • Call center, Work orders, space changes, lease processing

– Ad Hoc - not having a definable workflow or too infrequent to merit a formal process.
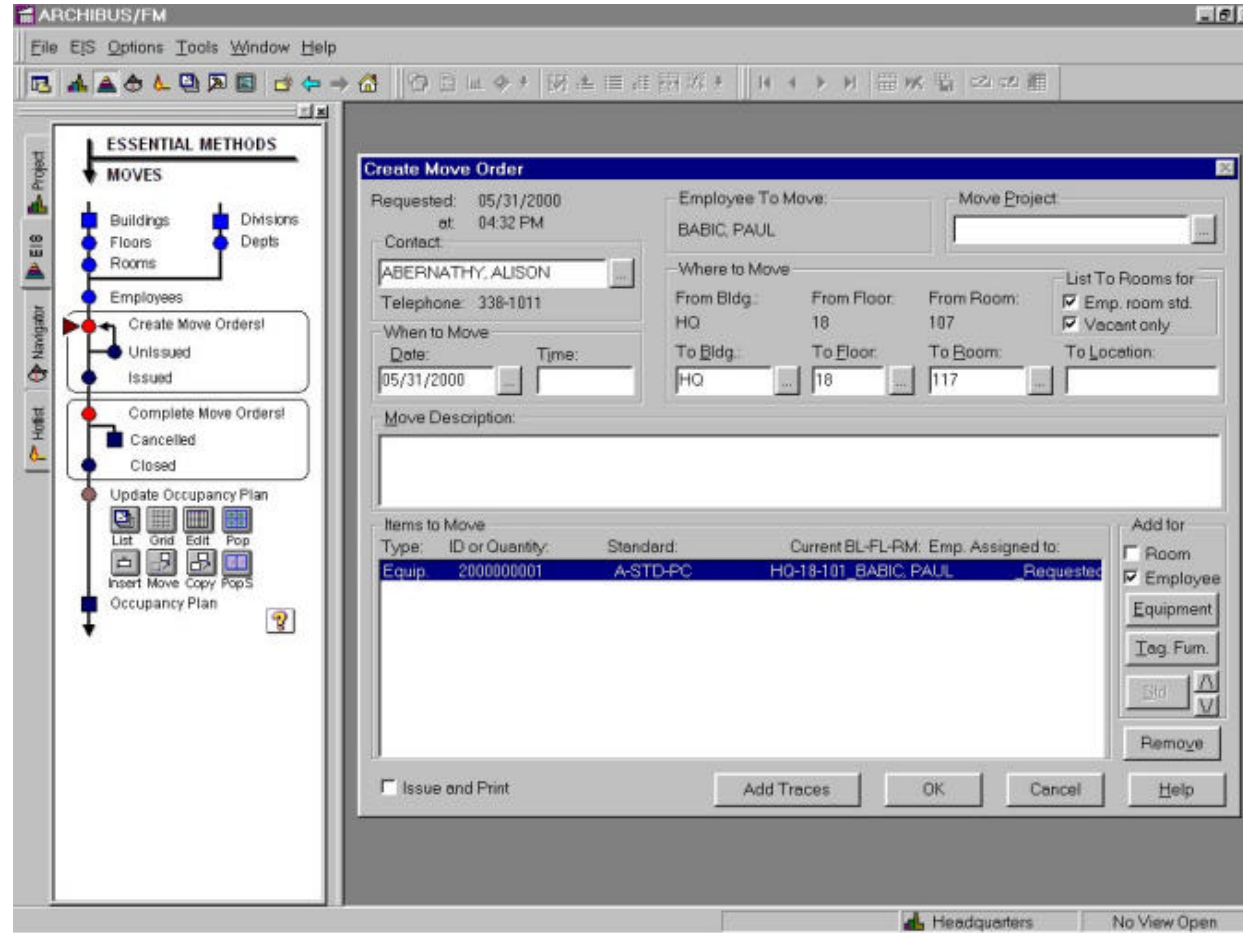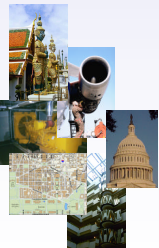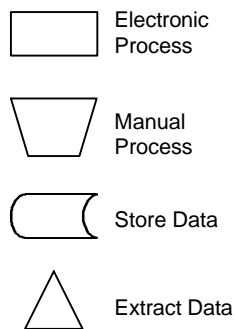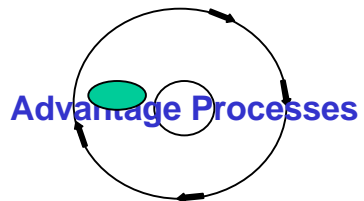 • Information requests
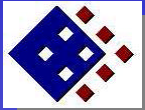
Diagrammatic Support

Image credit:
Archibus

Advantage Processes

Weekly Timeline

Timeline	Process
Monday - Friday	Staff Enters/Submits Weekly Timesheet in Advantage → Timesheet automatically printed
Friday AM	Staff delivers timesheet to Admin
	Admin checks for missing timesheets online
Friday Noon	Management Reviews/Signs Hardcopies → Admin Files Timesheets
Monday	Admin posts Final Timesheet data in Advantage
	Admin Runs HR Exceptions Report for current week ending
By Tuesday	Admin Submits Exception report to HR → Admin Files Exception Report copy

Automated Workflow

Legend:
- Electronic Process
- Manual Process
- Store Data
- Extract Data

Net

Advantage Automated Work Flow Processes

Staff
Enters/Submits
Weekly Timesheet
in Advantage

WARNING: Fewer than 37.5 regular hours.
Continue submitting timesheet?

Yes   No

Timesheet
automatically
printed

Admin checks for
missing timesheets
online

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Collaborative Project Applications

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Peregrine Graphic Workflow Creation Tool

Once created workflows are then automatically invoked by the applicable business processes. Drag and drop creation with user defined business rules.

Image credit:
Peregrine Systems

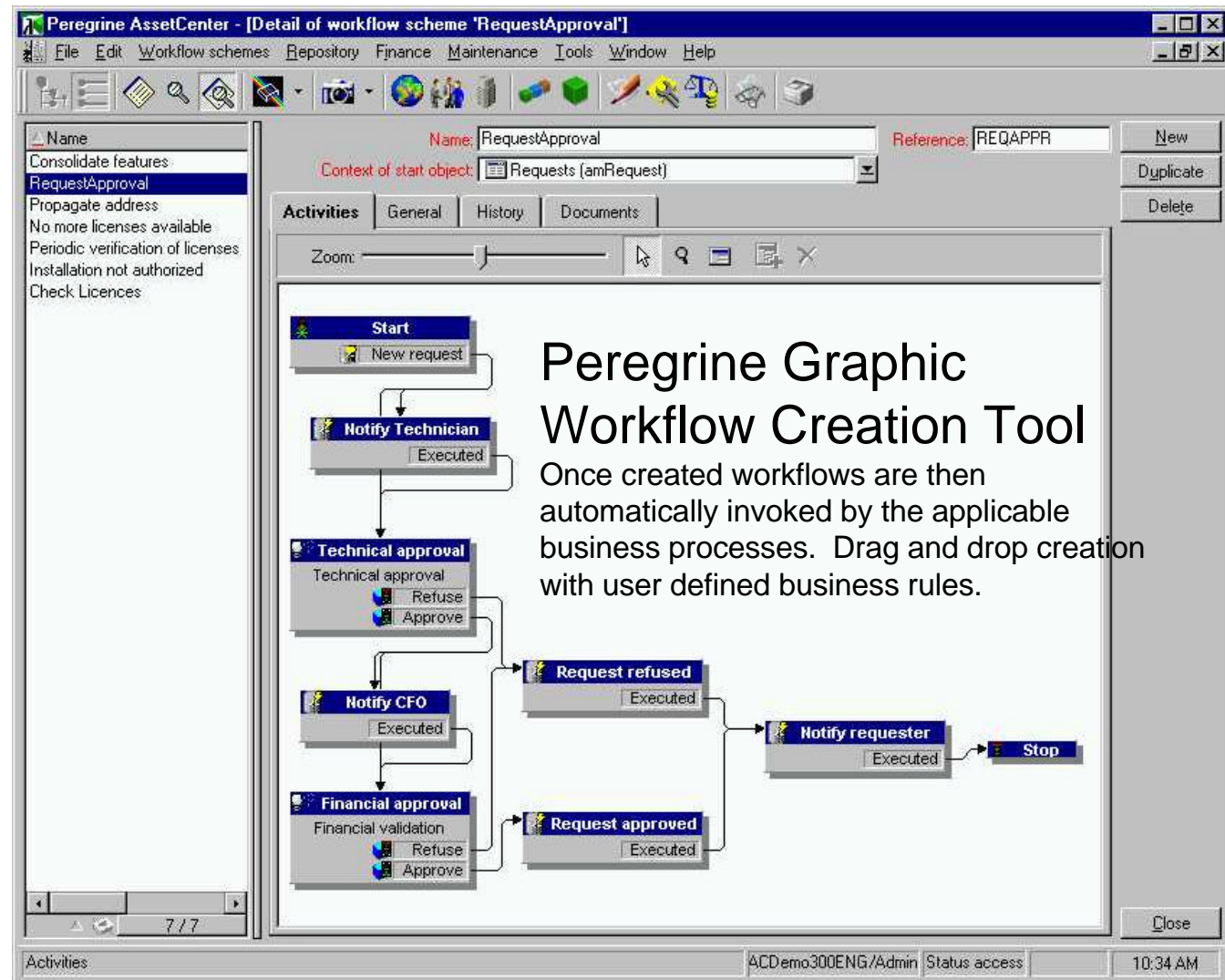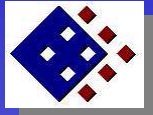© 2000, Graphic Systems, Inc.
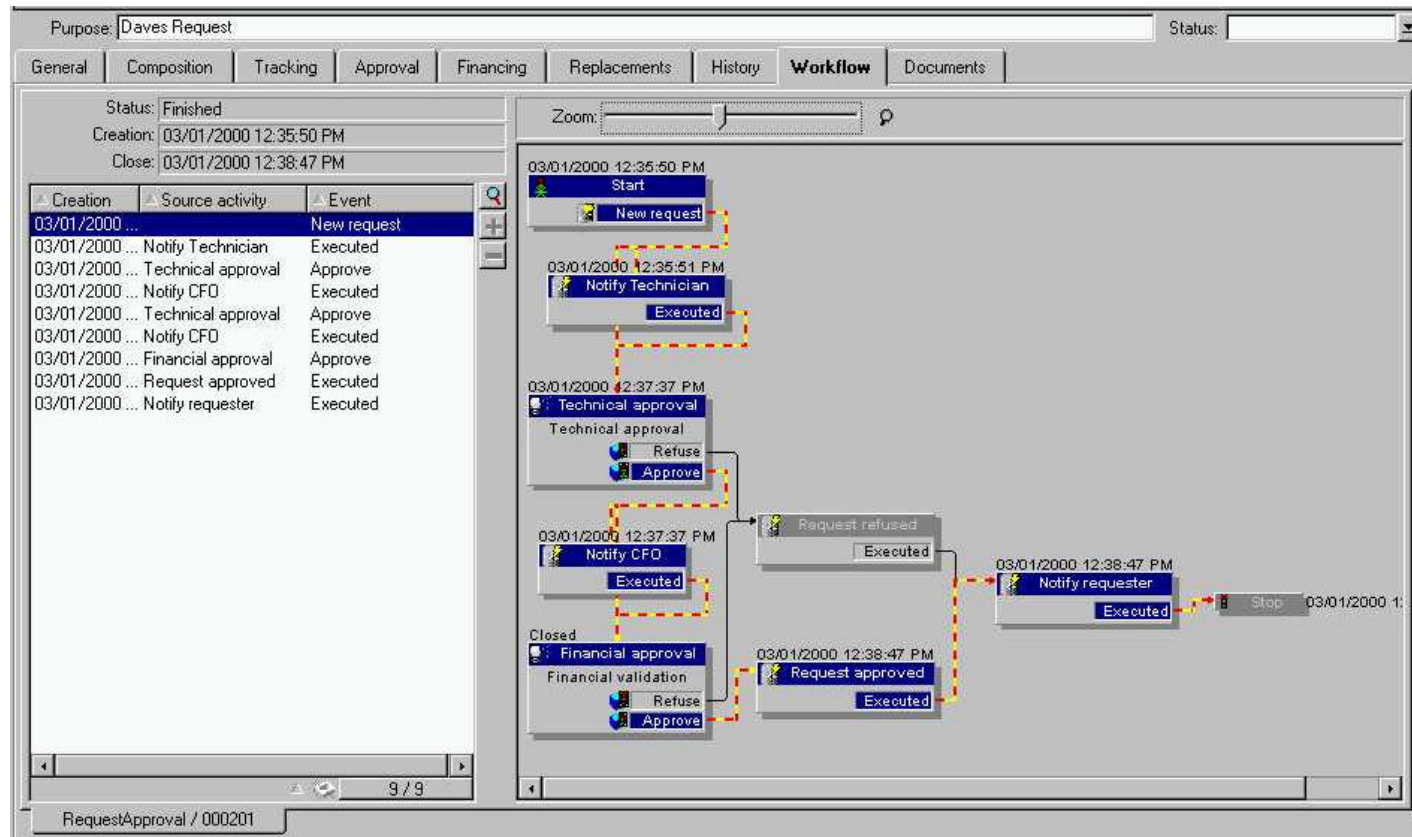
Graphic Workflow

Image credit:
Peregrine Systems

Workflow automatically invoked by business process. This image is viewable by end users.
Dashed line represents current status. Statistics are collected at left for process evaluation.
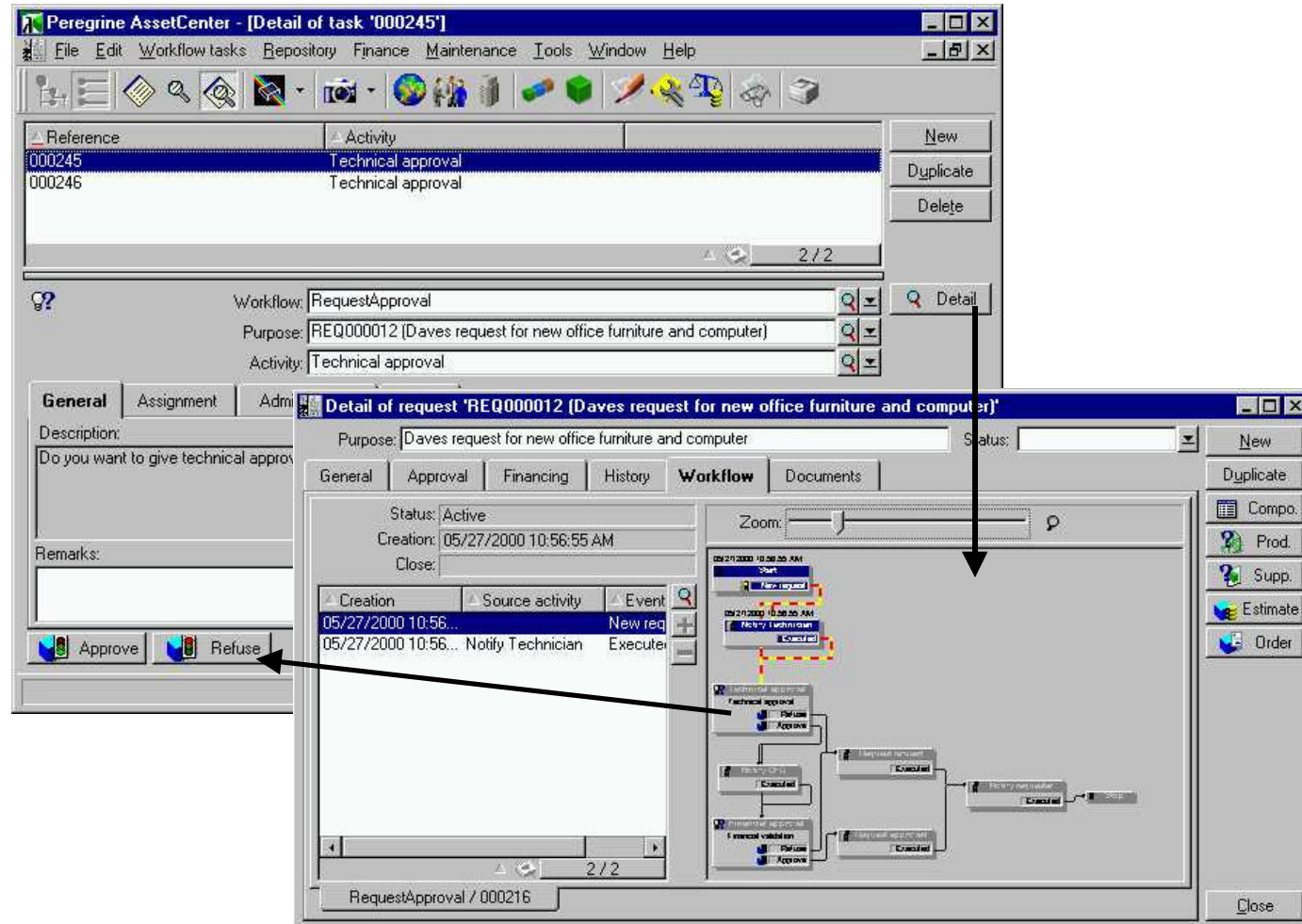
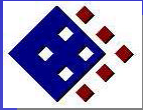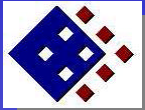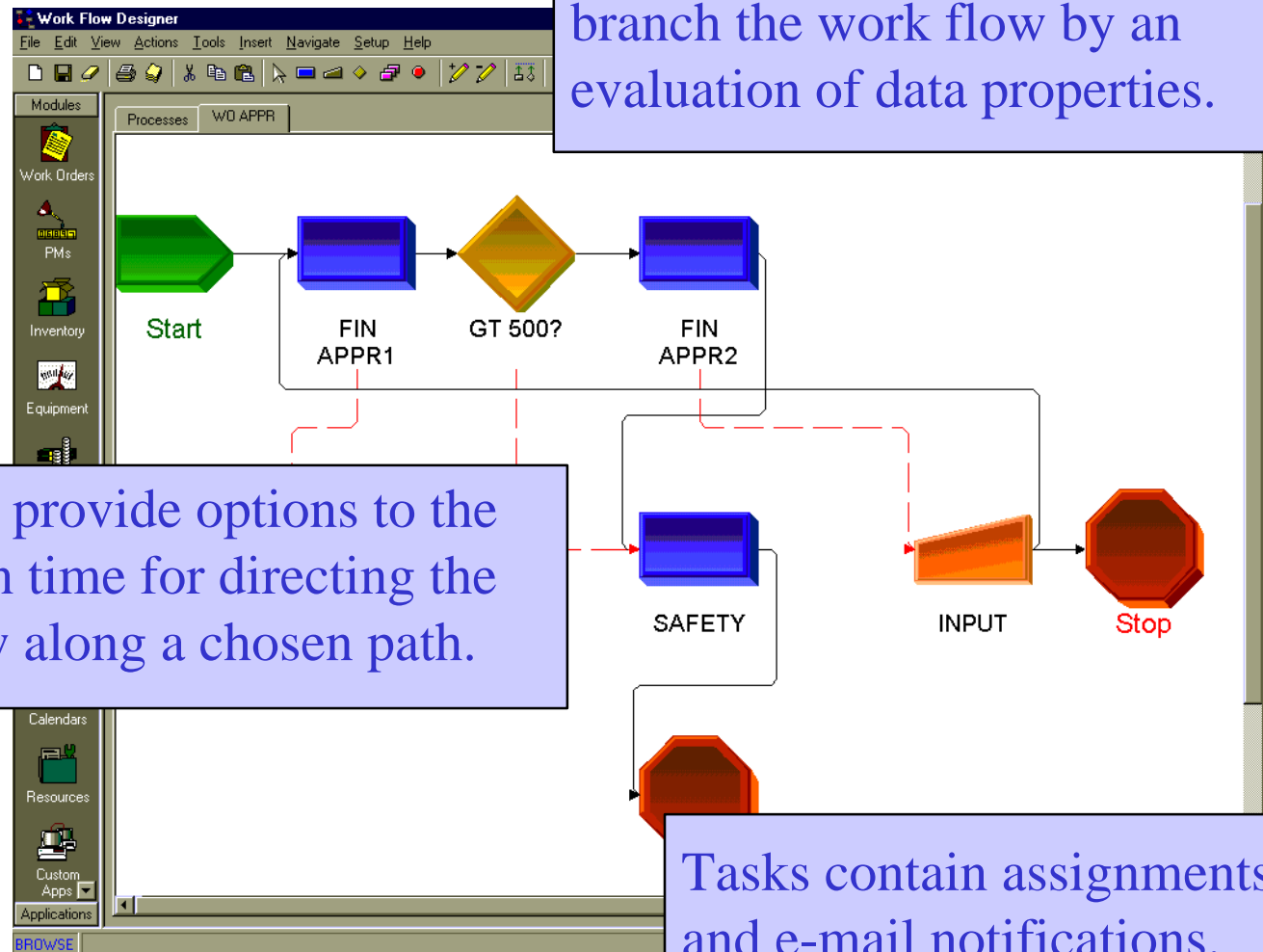© 2000, Graphic Systems, Inc.

Users are automatically notified (via email or through the application inbox) of any tasks assigned to them by the workflow. A detail button opens a window that presents all information about the task to the user. Actions are dynamically shown as buttons on the bottom of the inbox window.

Image credit:
Peregrine Systems

Maximo offers routings

Conditions automatically branch the work flow by an evaluation of data properties.

Work Flow Designer

File   Edit   View   Actions   Tools   Insert   Navigate   Setup   Help

Modules

Processes | WO APPR

Work Orders

PMs

Inventory

Equipment

Start → FIN APPR1 → GT 500? → FIN APPR2

SAFETY

INPUT → Stop

Decisions provide options to the user at run time for directing the work flow along a chosen path.

Calendars

Resources

Custom Apps

Applications

BROWSE

Tasks contain assignments and e-mail notifications.

In Box

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FMM - Facility Move Manager

Submit Relocation Request	Request Spaces	Print Disapprove Notice
Reserve Spaces	Request Approved	
Prepare Work Order	Execute Work Order	
Update Space Inventory	Print Work Order	
Print Transaction Reports	Archive Transactions	
	Prepare Historical Reports	

Basic Move Business Process
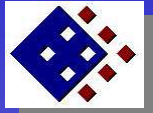
Facility Move Manager

Maintain data integrity
before, during & after the move

FIS/FM

File   More FMM   Reports   Modules   Help   Window

Facility Move Manager

Move Projects
Move Groups
Auto Requests
Manual Requests
Reservations
Move Wizard
Update Utility
Archive Utility
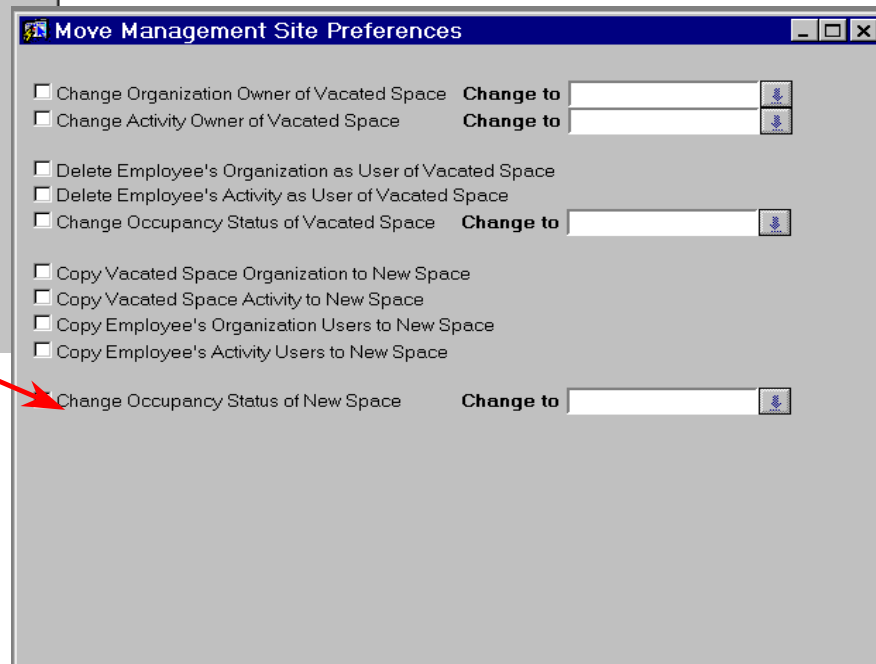Site Preferences
Space
Employee
Tagged Equipment
Non-Tagged Equip.
Occupancy Status
Entitlement

Facility Move Manager ™

MOVES

Move Management Site Preferences

☐ Change Organization Owner of Vacated Space   **Change to**
☐ Change Activity Owner of Vacated Space   **Change to**

☐ Delete Employee's Organization as User of Vacated Space
☐ Delete Employee's Activity as User of Vacated Space
☐ Change Occupancy Status of Vacated Space   **Change to**

☐ Copy Vacated Space Organization to New Space
☐ Copy Vacated Space Activity to New Space
☐ Copy Employee's Organization Users to New Space
☐ Copy Employee's Activity Users to New Space

☐ Change Occupancy Status of New Space   **Change to**
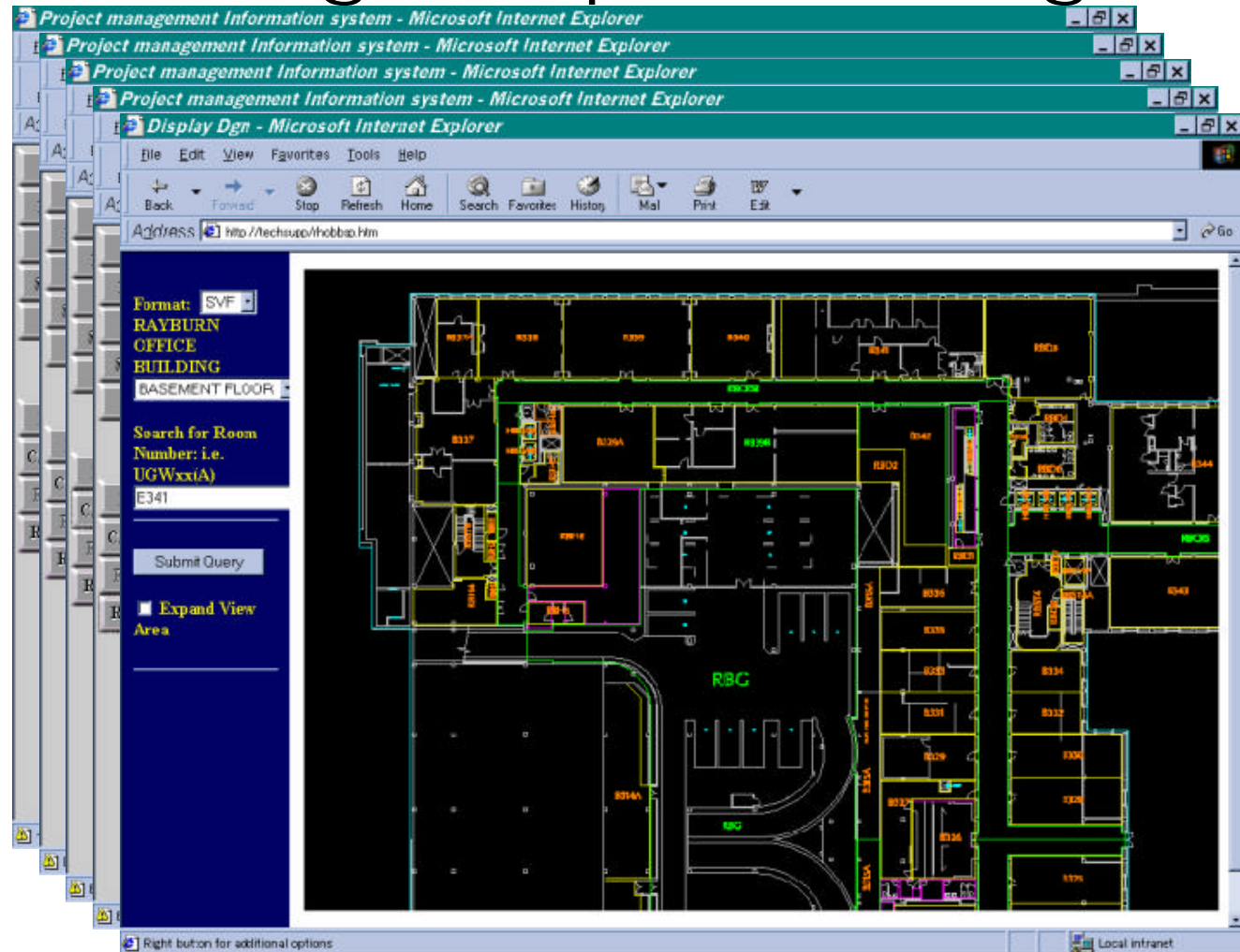
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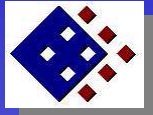
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Tracking of Space Changes
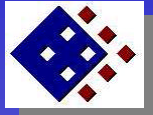
Read More About It

- Oracle Corporation - Oracle Workflow (http://technet.oracle.com/doc/applications/html/comnls/us/aic/icxarch.htm#c_wfdesc)

- Microsoft Corporation - Microsoft Access Workflow Designer for Microsoft SQL Server (http://msdn.microsoft.com/library/default.asp?URL=/library/officedev/bapp2000/acbachap10.htm)

- Ultimus - Ultimus Workflow Suite (http://www.ultimus1.com/)

- Edgewater Services - Project Edge (http://www.projectedge.com)

- Workflow Management Coalition (http://aiim.org/wfmc)

- Peregrine Systems - Asset Center, Facility Center, Get.It! (http://prgnweb.peregrine.com/servlet/SiteDriver/Content/1)

Continued...

Read More About It, cont.

- Facility Information Systems, Inc.- FIS/FM (http://www.fisinc.com)
- Archibus, Inc.- Archibus/FM (http://www.archibus.com/)
- PSDI - Maximo (http://www.maximo.com/text/adds-fs.htm)
- Deltek/Harper-Shuman - Advantage (http://www.deltek.com/products/prodadv/prodadv.htm)
- Model Server Publisher (http://www.bentley.com/modelserver)
- Allaire - Cold Fusion, Spectra (http://www.allaire.com/Products/index.cfm)
- Documentum (http://www.documentum.com/products/content-management_products.html)
- Action Technologies (http://www.actionworksmetro.com/Metro/index.cfm?area=metro#)
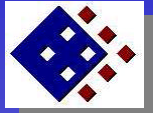
In Conclusion

- Summary
- Q&A